

complexity, of vital power, of instinct, and of intelligence, and all pointing to one Creative System, by whatever form of words we may try to define it.

Essay on the Trees and Shrubs of the Ancients; being the substance of four Lectures delivered before the University of Oxford. By C. DAUBENY, M.D., Professor of Botany and Rural Economy. Oxford, 1865.

The subject to which these lectures were devoted has long excited the curiosity of botanists, from its historical interest and also from its difficulty. The unscientific reader of the classical authors has probably no idea that the identification of the plants there named with those of our own or other northern countries is, to say the least, uncertain and unsatisfactory.

The fruit-trees have perhaps been determined with tolerable correctness, and their names properly translated by the ordinary lexicographers; for they are mostly (as we learn from Pliny) introduced plants even in Italy: the Peach from Persia, the Quince from Crete, the Damson from Damascus, and so on. Even the Cherry is stated by him to have come from Pontus. In most of these cases, doubtless he was correct; and perhaps even the cultivated Cherry may have been introduced, just as the cultivated Hop is in England, the wild Cherry and the wild Hop having in both cases escaped the unobservant people of the periods recorded for their introduction into the respective countries.

Dr. Daubeny seems to think that the only fruits indigenous to Italy were the Mulberry, Apple, Pear, Plum, and Sorb.

It is even more difficult properly to apply the classical names to the forest-trees than to the fruit-trees. Let us take the *Fagus* or Beech as an example. It is stated by Cæsar not to inhabit Britain; and, indeed, Dr. Daubeny seems to consider it to have been introduced to our country not earlier than the Norman conquest; but surely he must have forgotten the extensive woods formed of this tree which now or recently existed in the chalky parts of the country. It is quite likely that Cæsar did not see the Beech in Britain, for he does not seem to have penetrated to the districts wooded by it; and there is also the confusion between the *φηγός* of Theophrastus and *Fagus* of Pliny to be remembered. The former may have been the *Quercus æsculus*; the latter correspond with the *ὄξυς* of Theophrastus.

The following extract will show the elaborate and exhaustive manner in which these curious questions are treated in the present book. On the tribe of Firs stated by Pliny to be pitch-bearing Dr. Daubeny says:—

“These Pliny divides into *Abies* and *Pinus*: and modern botanists, having separated the *Abietinæ* into two groups—namely, the one with leaves solitary or in two ranks, the other in clusters of two, three, or five each—place the former under the head of *Abies*, and the latter under that of *Pinus*.

“ But we must not suppose that Pliny contemplated any such division. On the contrary, the Spruce Fir, which stands as the very type of the genus *Abies*, is not indigenous either in Italy or Greece. London, therefore, and other botanical writers are in error when they regard the *Abies* of the Latins as the Spruce Fir of Northern nations.

“ In order to ascertain what kind of tree Pliny meant by the term *Abies*, and Theophrastus by the corresponding one ἐλάτη, our best method will be to inquire, in the first instance, what are the species indigenous in Greece and Italy.

“ In Greece Sibthorp enumerated the following :—

“ 1. *Pinus sylvestris*, Scotch Fir, which he states to be found in the mountains of Bithynia. As this, however, has not been confirmed by succeeding travellers, it seems doubtful whether he may not have confounded with it the Corsican Pine, *P. Laricio*, which, though omitted by him, is recognized by other botanists (Lambert, ‘ Genus Pinus,’ Gussone, ‘ Flora Sicula ’) as existing in all the southern parts of Europe.

“ 2. *Pinus pinea*, Stone Pine, πίνος of Dioscorides (i. 86), met with on the sandy shores of Western Peloponnesus.

“ 3. *Pinus maritima*, Maritime Pine, πεύκη of Dioscorides, found everywhere in the sandy flats of Greece, and especially in Elis. It is probably the same as *P. halepensis*, which Sibthorp omits, but which is stated by other writers as the commonest Fir in Greece, from the sea-shore to a height of about 3000 feet above it.

“ *P. picea*, or *Abies pectinata*, the Silver Fir of modern botanists, and the ἐλάτη of Theophrastus, which is met with commonly on the loftier mountains of Greece.

“ In Italy the same species occur, and, in addition to them, the *P. pinaster*, or Cluster Pine, is abundant as far south as Genoa, where it gives place to the *Pinus halepensis* already noticed, and, according to Tenore (Flora Neap.) to three others, namely *P. brutia*, *pumilio*, and *uncinata*.

“ In the Alps, too, and the south of France the *Pinus Mugho* or *uncinata* and *Cembra* are abundant; so that the Roman writers may have had in their eye five more species of Fir than those occurring in Greece.

“ Now, in order to prove which of the species above assigned is the one designated by Pliny under the name of *Abies*, and by the Greeks under that of ἐλάτη, let us consider the properties assigned to that tree.

“ 1. It was especially useful in ship-building. Hence in Euripides (Phœn. 208) ἐλάτη is used for a ship.

“ 2. It grows chiefly on the summits of mountains.

“ 3. It resembles in form the *P. picea*.

“ 4. It is chiefly used for beams, and other purposes for which solidity is requisite.

“ 5. It gives out so much resin that the quality of the wood is often impaired by the quantity emitted, even the warmth of the sun being sufficient to cause an exudation; whereas the same process is even serviceable in the case of the *Picea*.

“6. Lastly, it is inferior in the quality of its timber to the last-named species.

“Now of the *Pinuses* above enumerated as existing in southern Europe, the *Abies pectinata* is the one which seems best to accord with the above description, especially when we add that Pliny (lib. xvi. c. 38) describes it as having its leaves indented like the teeth of a comb, which may be regarded as expressive of one of the generic distinctions between the *Abies* and *Pinus* of modern botanists.

“But we must not expect from this author, or indeed from any of those of antiquity, the same precision as is demanded from modern botanists in such matters. Probably the two lines in Virgil’s 7th Eclogue, v. 65—

‘*Fraxinus in silvis pulcherrima, Pinus in hortis,
Populus in fluviis, Abies in montibus altis,*’—

expressed the amount of discrimination which the Romans exercised in such matters; so that not only the *Abies pectinata*, but any other resinous tree, with narrow pointed leaves, growing in mountainous places, attaining to a great height, and serviceable for timber, would have been included by them under the name of *Abies*.”

The whole volume consists of similar discussions, and therefore does not admit of extract. It is sure to attract the attention of all who take any interest in the identification of ancient trees with those at present known, and must tend to correct many of the mistaken views now held by scholars concerning them.

The Record of Zoological Literature. 1864. Vol. I. Edited by ALBERT C. L. G. GÜNTHER, M.A., M.D., Ph.D., F.Z.S., &c. Van Voorst, 1865.

The difficulties which the naturalist has to encounter who is anxious to ascertain what has already been written on any special subject are continually becoming greater. Each year adds enormously to the aggregate of zoological literature; and from the work before us we learn that not less than 25,000 pages were, during the year 1864, devoted to the history of recent Zoology alone. Can we be surprised that genera and species have often again and again been redescribed, and that the lists of synonyms are often so long, when we bear in mind that naturalists engaged in identical pursuits are continually publishing their supposed discoveries in almost every language and every country in the world, and that the descriptions of species are, for the most part, not in monographs of particular sections of Zoology, but in the proceedings of some learned society, or the pages of some little-known periodical. Every zoologist must have frequently felt the great want of some guide, the references in which should act as fingerposts to point to him the directions in which he would be likely to obtain information respecting the object of his inquiry. True he has not been without some such guides; but they have been but inefficient. Engelmann’s ‘*Bibliotheca Historico-Naturalis*’ and Carus’s and Engelmann’s ‘*Bibliotheca Zoologica*,’ as well as Agassiz’s ‘*Bibliographia Zoologiæ et Geologiæ*,’ have been and must remain of great value; but they none of them bring